# Case Study

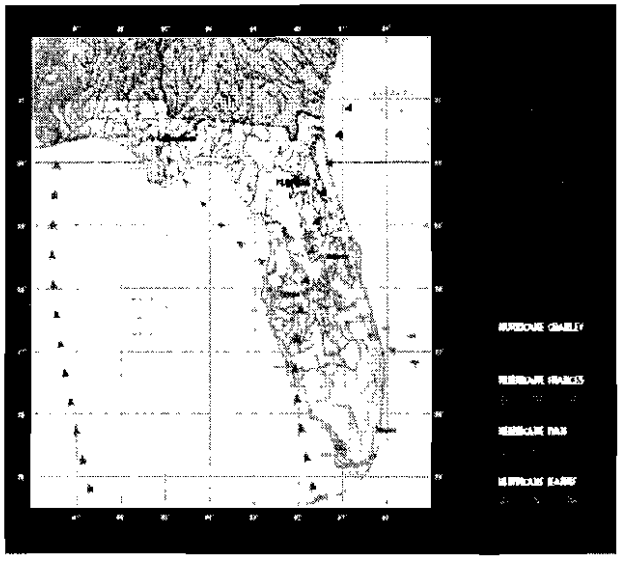
## SkyTerra's satellite two-way radio communication proved critical to Florida's response/recovery efforts

*Forty-four days of destruction with landlines down and cellular overloaded and unreliable*

## The Situation

Four hurricanes in two months! The 2004 hurricane season was a test of human spirit and emergency communication systems. Dealing with even a single hurricane is a challenge, but the sequence of one after another meant the providers of aid one week were requesting help the next.

On **August 14th**, Category 4 Hurricane Charley literally leveled parts of several Florida counties including Lee County, a large share of Charlotte County, as well as considerable damage to the inland counties of Hendy and Desoto.



With winds of 105 mph Hurricane Frances came ashore at Sewall's Point, FL on **September 5th**. The storm was downgraded to a Category 2 and became a sprawling mass of wind and rain that spread 950 miles north and south, as well as 740 miles east and west.

Hurricane Ivan was the season's monster storm. At one point Ivan's winds reach 165 mph, making it one of the strongest hurricanes in recorded history. Fortunately, it weakened considerably before coming ashore near Mobile Bay, Alabama, on **September 16th**. However, the storm's front right quadrant smashed into Pensacola, Florida, pounding the coastline spawning at a least a dozen tornados and wreaking havoc throughout inland towns.

On **September 25th** with winds of 115 mph, Hurricane Jeanne went ashore at almost the exact same spot as Frances. Jeanne ripped through areas only three weeks into recovery from Frances. Roofs that withstood Frances toppled to Jeanne. Slowing down to a crawl, Jeanne then dumped eight to ten inches of rain in eastern and central Polk County, FL.

In 2004 hurricanes killed 116 people in Florida. The last time one state took such a pounding was in 1886 when Texas was hit by four hurricanes.

## The Challenge

Cell phones and landline service were down and regular two-way radios didn't work over extended ranges. Emergency responders and relief providers needed a means to conduct essential, interoperable communications.

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## The Solution

SkyTerra's satellite push-to-talk, two-way radios proved to be an essential communications tool for emergency responders and relief providers. Federal and state emergency management personnel, along with volunteers from as far away as Alaska, helped with the recovery and rebuilding of the battered state.

Coverage was one of the big advantages of SkyTerra's satellite network. Interoperable satellite communications meant emergency coordinators stayed in contact with their mobile teams. Here are a few examples:

- The Duval County, FL emergency manager takes preparedness seriously and tested his SkyTerra equipment equipment on a weekly basis. Due to the training and familiarity with the MSAT equipment, the Pensacola emergency management team was able to immediately put SkyTerra equipment to use after Hurricane Ivan's strongest winds and biggest storm surge devastated the area.

- During Hurricane Frances, the Cape Coral, FL Fire Chief provided initial impact assessment support to several inland counties. In rapidly deteriorating conditions he called the Lee County, FL Emergency Operations Center via his mobile satellite phone for an update on the storm's position as it was blowing through. Although 75 miles away, the communication was very clear and the chief was able to report and coordinate emergency operations.

- When Hurricane Charley hit Charlotte County, FL, they had no communications. Manatee County sent some of their SkyTerra satellite units. Charlotte County was then able to communicate with 15 talk groups including hospitals, transportation, utilities, public safety and emergency management. Over the course of four hurricanes, they lost landlines and experienced cellular and radio overload. SkyTerra's satellite two-way radios ensured that they were never without communication.

**In any emergency, interoperable satellite communication is a most valuable asset.** Having enough radios to go around and the implementation of interoperable talkgroups between the various agencies was vital during the 2004 hurricane season. Without satellite, the various county and state EOCs wouldn't have been able to communicate with emergency crews during those critical hours and days of response and repair.

Satellite services from SkyTerra enabled emergency personnel to coordinate and maintain communication between multiple responding agencies – even when the four hurricanes took down the traditional land-based communications systems for extended periods.

# CASE STUDY:

## Statewide Talkgroup on SkyTerra's Network Became the Saving Grace During Katrina

### The Situation

Hurricane Katrina knocked out more than three million customer phone lines in the Louisiana, Mississippi and Alabama area. The wire line communications network sustained enormous damage to the switching centers as did the local wireless networks with up to 2,000 cell sites out of service. Radio towers were equally affected.

Of the 41 broadcast stations located in the New Orleans area only two AM and one FM station continued to transmit in the wake of the hurricane. Thirty eight 911 call centers went down. Basically, the entire communications infrastructure on the Mississippi Gulf Coast was destroyed.

As a result, in the first hours and days after Katrina made landfall satellite was the only reliable means of communications.

### The Challenge

Having reliable communications that are immune to destruction and congestion of terrestrial networks and provide communications interoperability. Unfortunately, in Katrina's wake, when communication was needed most, for the majority, it simply wasn't there.

### The Solution

The Mississippi Department of Wildlife, Fisheries and Parks (MDWFP) and SkyTerra played a key role. At the time, the MDWFP law enforcement satellite radio system was the only one in the state at the time and it was one of the ways by which the Governor's office was able to contact NEMA and FEMA. Cell towers were down. All power was out. Land lines were gone.

*Hurricane Katrina did incredible damage across six states in her seven day dance of destruction...damage not only by the hurricane itself, but from wind, rain and exceptionally large ocean surges along the coast. A total of 32 reported tornados, some as far east and north as Georgia and Tennessee were also associated with Katrina.*

The department installed their satellite two-way radio system from SkyTerra in 2003 after intensive research into a variety of communication systems. They had a number of districts that could not communicate with each other. In their business, reliable communications is critical. After switching to satellite radios, these officers were able to get rid of their cell phones and eliminate the costs of maintaining their old terrestrial towers. Satellite service provides complete coverage for the entire state.

Access to talk groups connects officers 24/7 with the MDWFP headquarters in Jackson. A CPI interface in the vehicle is used to allow cross-banding with land mobile radios so that officers continue to have communications as they move away from their vehicles. The central dispatch centers for Mississippi Emergency Management Agency (MEMA) and the MDWFP are linked to provide a coordinated response in the event of an incident or emergency.

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# CASE STUDY:

Kentucky Develops Statewide Satellite Network for Emergency Situations

## The Situation

Kentucky, like all states, is prone to disasters of all varieties, such as flooding, tornadoes, and earthquakes. Additionally, potential emergencies ranging from a pandemic flu outbreak to an anthrax attack are an increasing concern among public safety officials throughout the state.

In 2005, the state received a grant from the U.S. Department of Health and Human Services' Health Resources and Services Administration (HRSA) requiring implementation of a backup/redundant communications system between all hospitals and Federally Qualified Health Centers (FQHC) and clinics statewide.

## The Challenge

To meet the communications objective in the HRSA grant, health and medical facilities across Kentucky needed to find a reliable — but affordable — communications solution that they could depend on during an emergency situation, even when terrestrial service was unavailable.

Without a statewide infrastructure to leverage, building a new system was not an option due to the limited amount of funding available for the project. The Kentucky Department for Public Health (KDPH) was forced to seek a solution that supported the needs of the health and medical community while meeting the requirements of the HRSA grant program. In particular, KDPH sought equipment with dispatch radio features to allow personnel to be able to communicate one-to-one or one-to-many.

## The Solution

KDPH found its solution with SkyTerra Communication's push-to-talk satellite phones.

Using the HRSA grant, KDPH purchased 355 units for distribution to health facilities statewide.

Regions across the state were allotted satellite phones based on their size and provided general guidance on where to place the phones throughout the area. After all health facilities received a phone — some regions then provided SkyTerra phones to emergency management agencies and professionals such as EMS and regional HAZMAT teams.

Ice Storms Caused Widespread Damage in February 2009

"Being able to communicate is critical to successful emergency management and without the ability to communicate it would be impossible for health and public safety professionals to coordinate and collaborate on missions," explains Drew Chandler, IT and communications manager for KDPH's Preparedness Branch. "SkyTerra's equipment ensures that, at the push of a button, hospitals and health facilities across Kentucky are able to send a message to their colleagues and work together to best serve the public's needs."

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To enable multi-agency interoperable communications, KDPH used SkyTerra's satellite network to set up nine Kentucky-specific statewide talkgroups and has since joined several regional and national satellite mutual aid radio talkgroups (SMART™) operating on the SkyTerra network.

These talkgroups allow one-to-one push-to-talk "dispatch style" and one-to-many "broadcast style" communications and are used for both day-to-day operations as well as in times of emergency.

"The talkgroups provide a means of immediate communication between health and public safety professionals in and out of the state during an emergency," says Chandler.

"For instance, in 2008 strong winds from the remnants of Hurricane Ike damaged the terrestrial infrastructure in several parts of Kentucky, leading to a Presidential Disaster Declaration. With no cellular service or Internet connection for nearly a week in some areas, satellite became the only form of communication available and the talkgroups were heavily relied upon to coordinate rescue efforts to local citizens."

To ensure all hospitals and health facilities, as well as other public safety agencies with SkyTerra's satellite phones, are prepared for a potential disaster, KDPH developed the DPH Satellite Communications Training Module — an online training module that includes a step-by-step tutorial on how to operate the satellite phone and talkgroups. KDPH encourages facilities with a satellite phone to train employees on how to operate the device and requires quarterly testing.

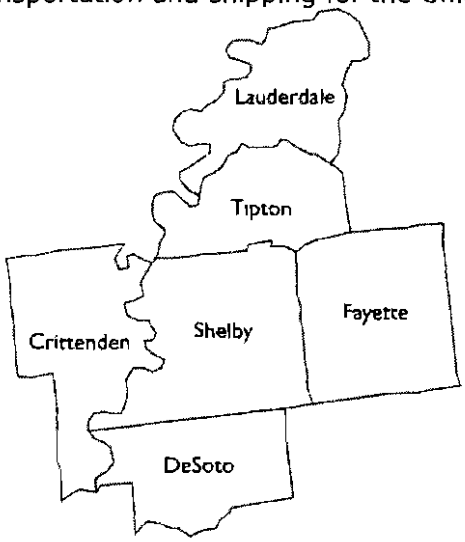
The ability for health and medical personnel to stay in touch and keep each other informed during a disaster is invaluable. The statewide satellite network developed by KDPH ensures that hospitals and health facilities across Kentucky have a reliable backup communications system that they can depend on in times of emergency.

## CASE STUDY:

# Memphis/Shelby County Urban Area Security Initiative (UASI) Region Turns to Satellite Network for Interoperable Communications

### The Situation

The Memphis/Shelby County UASI region is located in the heart of the Mid-South, right on the banks of the Mississippi River in the New Madrid Seismic Zone (NMSZ). The Memphis/Shelby County UASI region includes Shelby, Tipton, Fayette and Lauderdale counties in Tennessee, Crittenden County in Arkansas and DeSoto County in Mississippi, and is a center of transportation and shipping for the United States.




### The Challenge

The Memphis/Shelby County UASI region needed a fast, easy, and effective way to provide interoperable communications with schools, businesses, and citizens before, during, and after catastrophic events.

This region has two natural disaster concerns that prompted it to search for a point-to-multipoint communication system: 1) the threat of dangerous earthquakes along the NMSZ and, 2) the need to improve communications in light of increased tornado and flooding activity across the Mississippi Valley.

### The Solution

To meet these requirements, the Memphis/Shelby County UASI Region used a portion of its UASI grants funding designated for one of its Interoperable Communications Projects to purchase more than 250 MSAT-G2 satellite radios and service subscriptions. UASI grants provide funding for emergency response agencies in areas that are considered high-risk for natural or man-made disasters and are located within one of the specific Department of Homeland Security (DHS) designated urban areas, such as Memphis. "This is an excellent illustration where the public and private sectors have come together and worked in unison to develop a solution for a public safety requirement," said Bob Nations Jr. director, Shelby County Office of Preparedness HLS/EMA.

According to county planners, more than 230 mobile units in hardened travel cases with power adaptors will be placed with emergency response agencies throughout the Memphis/Shelby UASI region where they can be readily deployed during emergencies. The rest of the satellite devices will be deployed in critical command and control facilities including the county Emergency Operations Center, the Memphis Police and Fire Department headquarters, and other UASI emergency management locations.


Memphis at night

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